CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 94-007
NPDES NO. CA0029980

WASTE DISCHARGE REQUIREMENTS FOR:

CALTRANS - CYPRESS RECONSTRUCTION
ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. The California Department of Transportation (CALTRANS) hereinafter called the discharger, by application dated October 1, 1993, has applied for issuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES).

2. The primary purpose of the proposed I-880/Cypress project is to restore continuity and capacity to the interstate and regional network that was lost when the I-880 link between 18th and 34th streets in Oakland was destroyed by the Loma Prieta earthquake. The eight lane Cypress Freeway structure was a connecting link in the local, regional and interstate transportation network. The project would alleviate severe congestion at the I-580/980 and I-80/I-580/I-880 interchanges, as well as ease local circulation on city streets.

3. The project corridor limits lie within the area bounded by Route I-80 at Powell street in Emeryvillle and by Route I-80 at Powell Street in Emeryville in the south. Most of the corridor passes through Southern Pacific's West Oakland Yard, requiring extensive relocation of their rail lines. Several hazardous waste investigations have been conducted by the discharger and by property owners during the Right-of-Way acquisition process for the freeway. The discharger has acquired and is in the process of acquiring a total of 27 potentially and known polluted sites either partially or fully for the freeway reconstruction. Very limited data were obtained at the sites investigated.

4. Cursory subsurface investigations initiated in 1992 and 1993 of the soil and groundwater at these sites along the freeway corridor indicate pollution in both soil and groundwater throughout the proposed project area. The complete distribution and extent of pollutants reported are beyond the scope of these investigations. However, based on limited information the pollutants detected in soil and groundwater include: Petroleum Hydrocarbons as gasoline and diesel, non-speciated hydrocarbons, aromatic volatile organics, chlorinated volatile organics, semi-volatile organics, polynuclear aromatic hydrocarbons, pesticides and heavy metals.

5. This Order applies to several anticipated discharge points for extracted groundwater to be implemented by the discharger. Approximately three hundred footings will be excavated for the freeway structure in the cities of Oakland and Emeryville. Most of the excavations for the construction of the freeway will need to be dewatered for the work to proceed due to shallow groundwater conditions along the freeway corridor. This will necessitate an estimated discharge volume of approximately 100,000 gallons of water per day based on estimated average soil permeabilities and groundwater elevations. The groundwater from these excavations will be pumped into holding tanks. The water in the holding tanks will be stored to allow for settling of suspended solids. No other treatment method for dissolved pollutants, or pollutants that will not be effected by settling, is currently proposed.

6. The following description outlines seven potential discharge points for the project designated contracts A to G. Actual discharge points will be determined during construction but will be limited to the following locations. Extracted groundwater for contract A will be directed to the storm sewer drain at third and Magnolia Streets, at storm sewer juncture at Third street between Chestnut and Filbert Streets, at the juncture of Market Street and Fifth Street, or at the intersection at First and Market Streets. From these discharge points the water will flow south-west where it will discharge to the Oakland Inner Harbor in Central San Francisco Bay.

   For Contract B, the entire storm sewer system will be utilized as defined by the area bounded to the northwest by Cedar Street the northeast as Shorey Street, the southwest as Seventh Street and the southeast as Wood Street. Groundwater discharged into the storm sewers contained in this area will flow northwest into the Oakland Outer harbor in Central San Francisco Bay.

   For Contracts C, D, and F the groundwater will be discharged to the storm sewer system junctures along West Grand Avenue beginning at the at the intersection of West Grand Avenue and the Oakland Army Base and terminating at the intersection of West Grand Avenue, Maritime and Wake Streets. Discharged groundwater will flow northwest to the Oakland Outer Harbor.

   For Contract E the groundwater will be discharged into the aforementioned storm sewer system for C, D, and F or into the storm system along Burma Road between the East Bay Municipal Utilities District Building to the northeast and the Oakland Army Base property to the south, discharging into the Oakland Outer Harbor.

   For Contract G the groundwater will be discharged to the storm sewer system between the Distributuion Stucture and Powell Street discharging into the Emeryville Crescent Marsh.

7. Based upon the criteria in Board Resolution No. 88-160 and on information submitted by the discharger, the Board finds that extracted groundwater reclamation, re-use, or discharge to POTW are feasible, contingent upon pollutant levels set forth by the Board, and county or state health services agencies (See: Provision C).

8. The Basin Plan contains water quality objectives for Central San Francisco Bay and the Emeryville Crescent Marsh.

9. The existing and potential beneficial uses of Central San Francisco Bay and the Emeryville Crescent Marsh include:

   - Fresh water recharge
   - Warm fresh water habitat
   - Contact and non-contact water recreation
   - Wildlife habitat
   - Preservation of rare and endangered species
   - Estuarine habitat
   - Industrial process supply
   - Fish spawning and migration
   - Industrial service supply
   - Shellfishing
   - Navigation
   - Ocean commercial and sport fishing

10. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's ground water extraction and treatment systems and associated operation, maintenance, and monitoring plans constitute an acceptable control program for minimizing the discharge of toxicants to waters of the State.

11. Effluent limitations of this Order are based on the Clean Water Act, Basin Plan, State and U.S. Environmental Protection Agency (EPA) plans and policies, and best engineering and geologic judgement. EPA Region IX draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document" was also considered in the determination of effluent limits.

12. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

13. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

IT IS HEREBY ORDERED that the discharger, its agents, successors, and assigns in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. EFFLUENT LIMITATIONS

1. The effluent, at the discharge point to the storm drain, shall not contain constituents in excess of the limits contained in Table 1:

Table 1

Constituent	Instantaneous Maximum (µg/l)
a. Purgeable Halocarbons	
trichloroethylene (TCE)	5.0
tetrachloroethylene (PCE)	5.0
1,1,1-trichloroethane (TCA)	5.0
1,1-dichloroethane (1,1,-DCA)	5.0
1,1-dichloroethylene (1,1-DCE)	5.0
cis + trans-1,2-dichloroethylene	5.0
1,2-dichloroethane (1,2-DCA)	5.0
Trichloroflouromethane (Freon-11)	5.0
1,1,2-trichloro-1,2,2-triflouroethane (Freon 113)	5.0
chloroethene (vinyl chloride)	5.0
Any other chlorinated volatile organic compound (as identified by EPA method 601 or 624)	5.0
b. Purgeable Aromatics	
Benzene	5.0
Toluene	5.0
Ethylbenzene	5.0
Total Xylenes	5.0
Volatile Organic compounds (per	5.0

constituent, as identified by EPA method 624 or EPA methods 601 and 602)

c. Total Petroleum Hydrocarbons (as identified by modified EPA method 8015) — 50.0

d. Polynuclear Aromatic Hydrocarbons (defined as the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzoflouranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, flourene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene) — 15.0

e. Ethylene Dibromide (as identified by method 504) — 5.0

f. Base/neutral, Acid and Pesticide Compounds (per constituent, as identified by method 625) — 5.0

g. Inorganics

arsenic	20.0
cadmium	10.0
chromium (VI)	11.0
copper	20.0
cyanide	20.0
lead	5.6
mercury	1.0
nickel	7.1
selenium	5.0
silver	2.3
zinc	58.0

2. The flow of the discharge shall be limited to the treated groundwaters removed from the uppermost shallow water bearing zone.

3. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

4. In any representative set of samples, the discharges shall meet the following limit of quality:

Toxicity: The survival of test fishes in 96-hour static bioassays of the undiluted effluent as discharged shall be a three sample moving median of 90% survival, and a 90 percentile value of not less than 70% survival in a single sample. The bioassays shall be performed according to protocols approved by the U.S. EPA or the State Water Resources Control Board or published by the American Society for Testing and Materials or American Public Health Association. Two fish species will be tested concurrently. These shall be the most sensitive two species determined from a single concurrent screening of three using two of the following three test fish species in parallel tests. The test fish shall be rainbow trout, fathead minnow, or three-spine stickleback.

The compliance monitoring may be carried out with one, most sensitive fish species if both of the following conditions are met:

- the discharger can document that the acute toxicity limitation, as described above, has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of two fish species, **and**

- a single screening using all three fish species confirms the documented pattern.

B. RECEIVING WATER LIMITATIONS

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place:

a. floating, suspended, or deposited macroscopic particulate matter or foam;

b. bottom deposits or aquatic growths;

c. alteration of temperature or apparent color beyond present natural background levels;

d. visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of

these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

   a. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

   b. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

   c. Un-ionized ammonia (as N):

      0.025 mg/l annual mean
      0.4 mg/l maximum

3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. WATER RE-USE LIMITATIONS

1. A water re-use plan must be approved by the Executive Officer.

2. All water shall meet all effluent limitations in effect.

3. A report must be sent on a quarterly basis indicating the number of gallons used and locations used.

D. PROVISIONS

1. The discharger shall comply with all sections of this order immediately upon adoption by the Board and upon starting any discharge.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall notify the Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. Any discharge to a location other than the discharge point(s) specified in this Order will require a modification to this Order.

5. The discharger shall send as-built drawings of the remediation system(s).

6. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December 1986 and modified January 1987, except items A.10, B.2, B.3, C.8 and C.11.

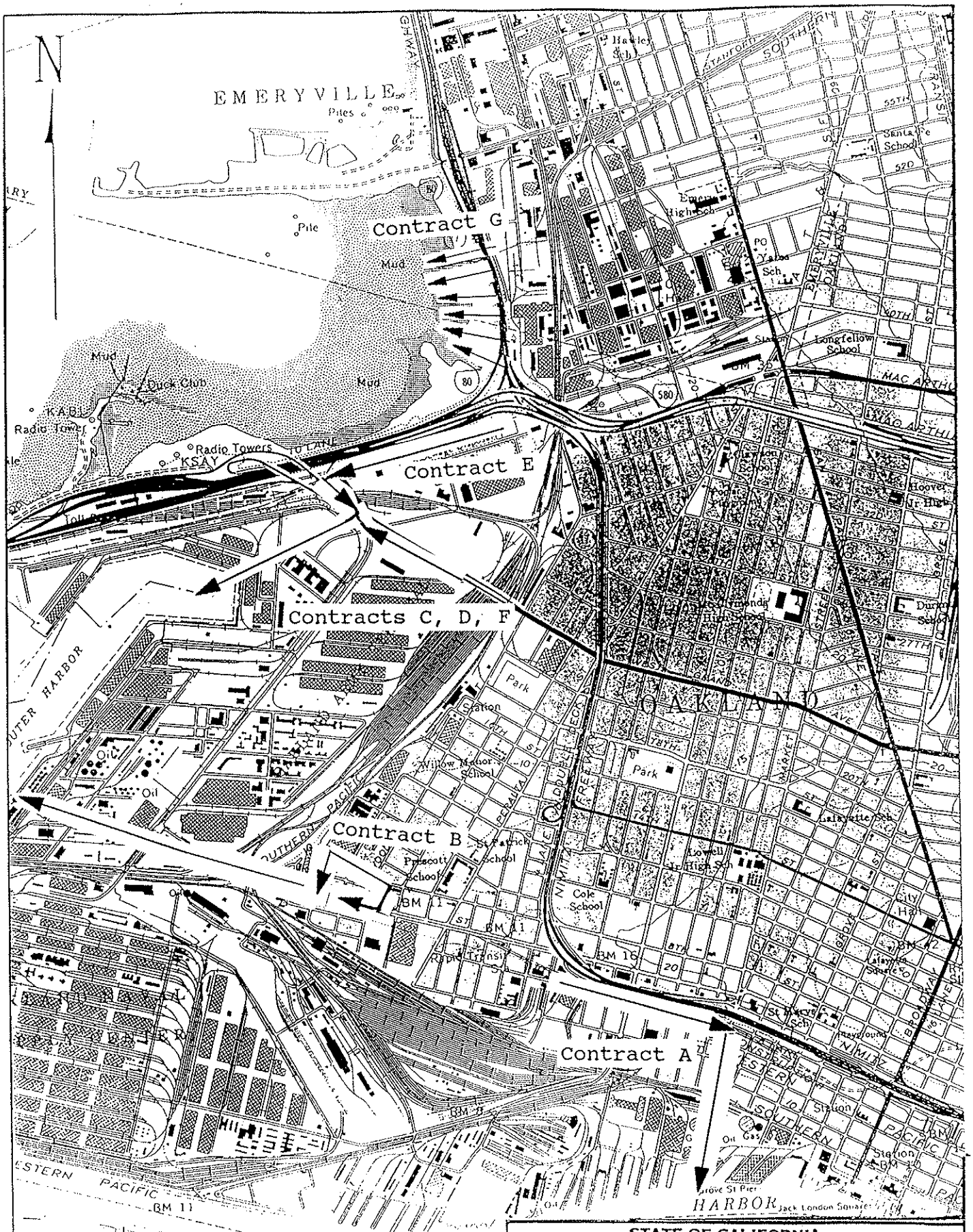
7. This Order expires January 19, 1999. The discharger must file a report of waste discharge in accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

8. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 18, 1994.

Lawrence P. Kolb
for
STEVEN R. RITCHIE
Executive Officer

Attachments: Self-Monitoring Program
Discharge Location Map



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE LOCATION MAP BY CONTRACT

DRAWN BY:	DATE:	DRWG. NO. 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR:

CALTRANS
CYPRESS RECONSTRUCTION PROJECT
OAKLAND/EMERYVILLE, ALAMEDA COUNTY

NPDES NO. CA0029980

ORDER NO. 94-007

CONSISTS OF:

PART A Dated December 1986 and modified January 1987

PART B ADOPTED JANUARY 19, 1994

PART B

CALTRANS
CYPRESS RECONSTRUCTION PROJECT
OAKLAND/EMERYVILLE, ALAMEDA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

A map with locations of treatment and discharge shall be included in each Self Monitoring Plan report. Following twenty days of settlement in the influent tank, and after decanting into the effluent tank, a representative groundwater sample shall be collected to determine compliance with discharge limits.

A. EFFLUENT TANK (T)

Station	Description
T-1...T-n	A composite sample will be taken from each tank . This sample will consist of four grab samples collected from the surface, 3 feet below the water surface, 6 feet below the water surface, and 9 feet below the water surface. These samples shall be taken to a state certified laboratory for compositing (four into one) and analysis.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis is provided in the attached Table A.

III. MODIFICATIONS TO PART A, DATED DECEMBER 1986 AND MODIFIED JANUARY 1987

All items of Self-Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following:

A. Additions to Part A: Section G.4.d.5: "Results from each required analysis and observation shall be submitted as laboratory originated data summary sheets in the quarterly self-monitoring reports. All chromatographic peaks for purgeable halocarbons and/or volatile organics shall be identified and quantified for all effluent samples. If previously unquantified peaks are identified in any effluent sample, then these peaks shall be confirmed based on analyses using chemical standards necessary to achieve proper identification and quantification. Results shall also be submitted for any additional analyses performed by the

discharger at the specific request of the Board for parameters for which effluent limits have been established and provided to the discharger by the Board."

B. Deletions from Part A: Sections D.2.b., D.2.g., D.3.b., E.1.e.1, E.1.f., E.2.b., E.3., E.4., E.5., F.2.b., G.2., G.4.b., and G.4.f.

C. Modifications to Part A: For the following, the discharger shall comply with the Sections as changed and reported herein:

1. Section D.1. is changed to read:

"Samples of influent shall be collected according to the schedule in Part B and shall not include any plant recirculation or other sidestream wastes. Deviation from this must be approved by the Executive Officer."

2. Section D.2.a. is changed to read:

"Samples of effluent and receiving waters shall be collected at times coincident with influent sampling unless otherwise stipulated. The Regional Board or Executive Officer may approve an alternative sampling plan if it is demonstrated that expected operating conditions warrant a deviation from the standard sampling plan."

3. Section D.2.d. is changed to read:

"If two consecutive samples of any one constituent or parameter monitored on a weekly or monthly basis in a 30-day period exceed the effluent limit or are otherwise out of compliance, or if the required sampling frequency is once per month or less (quarterly, annually or other) and the sample or parameter exceeds the limit or is otherwise out of compliance, the discharger shall implement procedure(s) acceptable to or approved by the Board's Executive Officer, on a case by case basis."

4. Section D.2.e. is changed to read:

"If any instantaneous maximum limit is exceeded, within 24 hours of receiving the analytical results indicating the violation, a confirmation sample shall be taken and analyzed with 24 hour turn-around time. If the instantaneous maximum is violated in the second sample, the discharge shall notify Regional Board staff

immediately. The Executive Officer may order the discharge to be terminated, on a case-by-case basis."

5. In Section F.1., the phrase "(at the waste treatment plant)" is changed to read, "(to Regional Board or U.S. Environmental Protection Agency staff for inspection)."

6. Section F.2.a. is changed to read:

   "Record flows from totalizing meters every two weeks and calculate average daily flow for each month."

7. Section F.2.b. is changed to read:

   "Establish flows per minute and estimate flow in gallons per day."

8. Quarterly written reports required in Section G.4 shall be filed quarterly by the thirtieth day of the following month.

9. Section G.4.e is changed to read:

   "Summary tabulations of the data shall include, for each constituent, total number of analyses, maximum, minimum, and average values for each period. Total flow data shall also be included. This information shall be prepared in a format similar to EPA Form 3320-1. This information shall be submitted only to the Board:

   Executive Officer
   California Regional Water Quality Control Board
   2101 Webster Street, Suite 500
   Oakland, CA 94612

10. The Annual Report required in Section G.5. shall be submitted by January 30 of each year in place of the quarterly report due on the same day.

IV. MISCELLANEOUS REPORTING

If any chemicals or additives are proposed to be used in the operation and/or maintenance of the ground water extraction/treatment system, the discharger shall obtain the Executive Officer's concurrence prior to use. The details

concerning such approved use shall be reported in the next periodic report submitted to the Board.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 92-135.

2. Was adopted by the Board on January 19, 1994.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or the Board.

Lawrence P. Kolb
for
STEVEN R. RITCHIE
Executive Officer

Attachments: Table A

TABLE A
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	T-1...T-n
Type of Sample	G,C,DI
Flow Rate (mgd)	-
Bioassay 96-hr % survival (flow-through or static)	V
Ammonia Nitrogen (mg/l & kg/day)	B
Turbidity (NTU's)	
pH (units)	B
Dissolved Oxygen (mg/l and % saturation)	B
Temperature (°C)	B
Standard Observations	-
Arsenic (mg/l)	B
Cadmium (mg/l)	B
Chromium (hexavalent) (mg/l)	B
Copper (mg/l)	B
Cyanide (mg/l)	B
Lead (mg/l)	B
Mercury (mg/l)	B
Nickel (mg/l)	B
Selenium (mg/l)	B
Silver (mg/l)	B
Zinc (mg/l)	B
TPH w/ EPA Modified Method 8015	B
PNAs w/EPA Method 610	B
EDB w/EPA Method 504	B
Semi-Volatile w/EPA Method 625 Base/Neutral, Acid and Pesticide	B
Volatile Organics w/ EPA 601 and 602 or 624*	B

LEGEND FOR TABLE A

TYPES OF SAMPLES

G = grab sample
C = composite
Cont. = continuous sampling
DI = depth integrated sample
BS = bottom sediment sample
O = observation
- = none required

TYPES OF STATIONS

I = intake or influent stations
E = effluent sampling stations
D = discharge point sampling stations
C = receiving water sample stations
T = tank
B = bottom sediment station
G = groundwater station

FREQUENCY OF SAMPLING

H = once each hour
D = once each day
W = once each week
M = once each month

Y = once each year

B = once each batch (tank)
V = varies; total ammonia nitrogen shall be analyzed and unionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival

2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/y = once in March and once in September
Q = quarterly, once in March, June, September, and December

W/M = weekly for first three months after startup of operations and reduced to monthly thereafter

W/Y = weekly for first three months after startup of operations and reduced to annually thereafter

M/Y = monthly for first six months after startup of operations and reduced to annually thereafter

2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

Q/Y = quarterly for first year after permit reissuance, reduced to annually thereafter

W/Q = weekly for first three months after startup of operations and reduced to quarterly thereafter

M/Q = monthly for first three months after permit re-issuance and reduced to quarterly thereafter

* When water samples are tested by EPA Method 624, it is not necessary to test the samples by EPA Methods 601 and 602.